

What is claimed is:

1. A method of producing micro-lenses, including the steps of:

forming a plurality of pixel electrodes on a first light transmitting type substrate to form a first substrate;

forming counter electrodes on a second light transmitting type substrate to form a second substrate;

forming a light blocking layer having apertures in at least portions corresponding to said pixel electrodes on at least one of said first and second substrates;

bonding peripheries of said first and second substrates so that said pixel electrodes and said counter electrodes face each other with a clearance therebetween;

forming a focusing layer containing a photosensitive material on a surface of said second substrate facing said bonding surface;

irradiating light from said first substrate side to expose and cure the portions of said focusing layer facing the apertures of said light blocking film by light transmitted through the apertures of said light blocking layer; and

removing uncured portions of said focusing layer,

to thereby form the cured portions of said focusing layer as micro-lenses for focusing the light incident from said focusing layer side to the apertures of said light blocking layer.

- 5 2. A method of producing micro-lenses as set forth in claim 1, wherein the step of irradiating the light from said first substrate side, includes a step of using schematically parallel beams as the light.

- 10 3. A method of producing micro-lenses as set forth in claim 1, wherein the step of irradiating the light from said first substrate side, includes a step of irradiating at least two beams having different angles with respect to a normal direction perpendicular to the light irradiated surface of said first substrate.

- 15 4. A method of producing micro-lenses as set forth in claim 1, wherein the step of irradiating the light from said first substrate side, includes a step of irradiating a beam having a predetermined angle with respect to the normal direction perpendicular to the
20 light irradiated surface of said first substrate while rotating the same about the related normal direction.

5. A method of production of micro-lenses as set forth in claim 1, wherein

- the step of forming the focusing layer,
25 includes a step of forming said focusing layer by an

ultraviolet curing resin and,

the step of irradiating light from said first substrate side, includes a step of irradiating ultraviolet light as said light.

5 6. A method of producing micro-lenses as set forth in claim 1, further including, after the step of bonding the peripheries of the first and second substrates and before the step of irradiating the light from the first substrate side, a step of injecting a substance having an
10 electrooptic effect into the clearances between the pixel electrodes and counter electrodes to form a layer of the substance.

 7. A method of producing micro-lenses as set forth in claim 6, wherein the step of forming said layer of a
15 substance, includes a step of injecting a liquid crystal composition as said substance to form a liquid crystal layer.

 8. A method of producing micro-lenses as set forth in claim 1, further including, after the step of
20 irradiating light from said first substrate side, a step of injecting a substance having an electrooptic effect into the clearances between the pixel electrodes and counter electrodes to form a layer of the substance.

 9. A method of producing micro-lenses as set forth
25 in claim 8, wherein the step of forming said layer of a

substance, includes a step of injecting a liquid crystal composition as said substance to form a liquid crystal layer.

10. A method of producing an image display device,
5 including the steps of:

forming a plurality of pixel electrodes on a first light transmitting type substrate and forming a switching element connected to the pixel electrodes to form a first substrate;

10 forming counter electrodes on a second light transmitting type substrate to form a second substrate;

forming on at least one of said first substrate and said second substrate a light blocking layer covering said switching element and clearances among said pixel
15 electrodes and having apertures at least at portions corresponding to said pixel electrodes;

bonding peripheries of said first and second substrates so that said pixel electrodes and said counter electrodes face each other with a clearance therebetween;

20 forming a focusing layer containing a photosensitive material on a surface of said second substrate facing said bonding surface;

irradiating light from said first substrate side to expose and cure the portions of said focusing
25 layer facing the apertures of said light blocking film by

the light transmitted through the apertures of said light blocking layer; and

removing uncured portions of said focusing layer,

5 to thereby form the cured portions of said focusing layer as micro-lenses for focusing the light incident from said focusing layer side to the apertures of said light blocking layer.

11. A method of producing an image display device
10 as set forth in claim 10, wherein the step of irradiating the light from said first substrate side, includes a step of using schematically parallel beams as the light.

12. A method of producing an image display device
as set forth in claim 10, wherein the step of irradiating
15 the light from said first substrate side, includes a step of irradiating at least two beams having different angles with respect to a normal direction perpendicular to the light irradiated surface of said first substrate.

13. A method of producing an image display device
20 as set forth in claim 10, wherein the step of irradiating the light from said first substrate side, includes a step of irradiating a beam having a predetermined angle with respect to the normal direction perpendicular to the light irradiated surface of said first substrate while
25 rotating the same about the related normal direction.

14. A method of producing an image display device
as set forth in claim 10, wherein

the step of forming the focusing layer,
includes a step of forming said focusing layer by an

5 ultraviolet curing resin and,

the step of irradiating light from said first
substrate side, includes a step of irradiating
ultraviolet light as said light.

15. A method of producing an image display device
10 as set forth in claim 10, further including, after the
step of bonding the peripheries of the first and second
substrates and before the step of irradiating the light
from the first substrate side, a step of injecting a
substance having an electrooptic effect into the
15 clearances between the pixel electrodes and counter
electrodes to form a layer of the substance.

16. A method of producing an image display device
as set forth in claim 15, wherein the step of forming
said layer of a substance, includes a step of injecting a
20 liquid crystal composition as said substance to form a
liquid crystal layer.

17. A method of producing an image display device
as set forth in claim 10, further including, after the
step of irradiating light from said first substrate side,
25 a step of injecting a substance having an electrooptic

effect into the clearances between the pixel electrodes and counter electrodes to form a layer of the substance.

18. A method of producing an image display device as set forth in claim 17, wherein the step of forming
5 said layer of a substance, includes a step of injecting a liquid crystal composition as said substance to form a liquid crystal layer.